

## ABSTRACT OF THE DISCLOSURE

An apparatus controls positions of plural mirror segments in a segmented mirror with an edge sensor system and a controller. Current mirror segment edge sensor measurements and edge sensor reference measurements are compared with calculated edge sensor bias measurements representing a global radius of curvature.

Accumulated prior actuator commands output from an edge sensor control unit are combined with an estimator matrix to form the edge sensor bias measurements. An optimal control matrix unit then accumulates the plurality of edge sensor error signals calculated by the summation unit and outputs the corresponding plurality of actuator commands. The plural mirror actuators respond to the actuator commands by moving respective positions of the mirror segments. A predetermined number of boundary conditions, corresponding to a plurality of hexagonal mirror locations, are removed to afford mathematical matrix calculation.

## CERTIFICATE OF MAILING

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